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## GUTTERING SYSTEM

### Background of the Invention

The present invention relates to a guttering system, and in particular, to an apparatus for securing a gutter to a fascia such that it can move in a pivoting manner, and, to a method of cleaning a gutter enabled by pivotal movement of the components thereof. The present invention also incorporates a specialised tool for reading and effecting the pivotal movement of the gutter from a substrate surface.

### 10 Description of the Prior Art

The reference to any prior art in this specification is not, and should not be taken as, an acknowledgement or any form of suggestion that that prior art forms part of the common general knowledge in Australia.

15 In many areas, the build-up of leaves on the roofs and in the gutters of houses and other buildings is a common problem.

Various attempts to minimise the collection of leaves in such guttering systems have been made. For example, various screens and mesh materials have been used to extend outwardly of the roof surface to cover the gutter, such that leaves do not fall into the gutter, but rather, are directed across the gutter to fall from the roof. These devices function such that water collected on the roof surfaces is still able to enter the guttering system and be carried away appropriately by downpipes to the stormwater system. Whilst these devices are effective to a certain extent, in that leaves larger than the mesh size will not fall through the mesh or grate material and will be moved away as required, small leaves, dirt, etc., still fall into the guttering system whether or not the mesh material is in situ.

In addition to such mesh materials not functioning to prevent leaves and dirt from entering the filtering the stormwater system particularly well, another major problem

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caused as a result of the build-up of leaves and other material in guttering system is that the houses or other buildings can become an extreme bushfire risk.

This therefore identifies a need to provide a system and method for being able to  
5 more effectively clean out the guttering systems of houses and other buildings, to avoid the build-up of leaves and other debris therein.

### Summary of the Invention

The present invention seeks to provide a solution to the aforementioned problem, or  
10 at least an alternative to the presently known methods and systems.

In one broad form, the present invention provides an apparatus for pivotally  
securing a gutter to a fascia such that it may be pivotally moved between a first (draining)  
position and a second (cleaning) position.  
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Preferably, the apparatus includes a bracket having an arm outwardly extending  
therefrom, and, a hinge means provided at a remote end of said arm, said gutter adapted to  
be secured to said hinge means such that pivotal movement is effected thereabouts.

20 In one preferred form, said gutter includes an integrally formed connection means  
for pivotal attachment of said gutter to said hinge means on said arm.

In an alternative, but also preferred form, the apparatus includes a connection  
means which is adapted to be secured to said gutter and to said hinge means.  
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Preferably, said connection means is shaped to substantially surround and thereby  
support said gutter therein.

Also preferably, the extremities of said connection means are formed with  
30 deformable tabs thereon, which are adapted to be deformed to at least partially surround  
lips formed on the edges of said gutter's walls.

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Preferably, the apparatus further includes a releasable locking means to lock said gutter in said first (draining) position.

5           In a further broad form, the present invention provides a gutter adapted to be pivotally secured to a fascia such that it can be pivoted between a first (draining) position and a second (cleaning) position.

10           Preferably the gutter includes a hinge means for effectively pivotal movement thereabouts.

Also preferably, said apparatus is shaped to complement the profile of the gutter to which it is attached.

15           Preferably, said arm extends outwards from said connection means in a substantially L-shaped configuration.

20           In a further broad form, the present invention provides a guttering system which enable pivoted movement of a gutter component between a first (draining) position and a second (cleaning) position.

Preferably, said guttering system pivots upwardly and outwardly from a pivotal axis which is displaced outwards from a fascia to which said guttering system is affixed.

25           Also preferably, a guttering system is adapted to pivotally move relative to compatible ancillary components including, but not limited to, corner gutter components, downpipe components, etc.

30           Preferably, a seal is provided between said respective gutter components and/or said compatible ancillary components.

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In a further broad form, the present invention provides a method of cleaning a gutter, including the steps of:

pivoting said gutter to a cleaning position, such that the gutter is disposed outwardly relative to its draining position;

- 5        removing leaves from said gutter; and,  
      returning said gutter to said draining position.

10        Preferably, the tool further includes lock operating means to lock and/or unlock a locking means.

In yet a further broad form, the present invention provides a tool for effecting movement of a gutter system between a first (draining) position and a second (cleaning) position, including a tool having a shaped end adapted to engage with said gutter, said tool  
15        being provided on an elongate handle such that said movement may be effected from a substrate surface remote from said gutter.

### **Brief Description of the Drawings**

The present invention will become more fully understood from the following  
20        detailed description of preferred but non-limiting embodiments thereof, described in connection with the accompanying drawing(s), wherein:

Fig. 1 illustrates an exploded isometric view of a preferred embodiment of the components of a guttering system in accordance with the present invention;

25        Fig. 2 illustrates, in Figs. 2(a) and 2(b) thereof, two elevational views of preferred arrangements of guttering system embodiments, which operate in a similar manner;

Fig. 3 illustrates, in Figs. 3(a), 3(b) and 3(c), plan views of how the gutter system of the present invention may alternatively be installed about a corner of a building;

Fig. 4 illustrates an elevational view of how the guttering system of the present invention may be connected into a downpipe;

30        Fig. 5 illustrates an elevational view of an alternatively preferred embodiment of the present invention;

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Fig. 6 illustrates, in Figs. 6(a), 6(b) and 6(c) respectively, views of an alternatively preferred embodiment of the components of a guttering system in accordance with the present invention;

Fig. 7 illustrates, in Figs. 7(a) and 7(b) respectively, views of yet an alternatively preferred embodiment of a guttering system, in accordance with the present invention,  
5 suited to rounded gutters;

Fig. 8 illustrates the tool head of a guttering tilt device which may be used in conjunction with the guttering system of the present invention;

Fig. 9 illustrates details of an external corner gutter with 45° stop ends, Fig. 9(b)  
10 illustrating a detail of the stop ends; and,

Fig. 10 illustrates the detail of an internal corner hinge clip, which may be utilised for internal gutter corners in the guttering system of the present invention.

#### **Detailed Description of Preferred Embodiments**

15 Throughout the drawings, like numerals will be used to identify similar features, except where expressly otherwise indicated.

As shown in Fig. 1, the guttering system of the present invention, and generally designated by the numeral 1, may comprise a pair of brackets. The embodiment illustrates  
20 a fascia bracket 2, and a gutter bracket 3, which are interconnected via hinge pin 4. The fascia bracket may be provided with a plurality of connection means 5, shown as a plurality of orifices 5 in the upwardly extending portion of the fascia bracket 2, and be connected to the fascia via nails, screws or any or like connection means.

25 A gutter bracket 3 is shaped such that it can receive a gutter within its side walls 6 and 7, such that the tabs 8 and 9 extending therefrom, respectively, may be bent to straddle the lip of the gutter (not shown).

Once the gutter bracket 3 is installed to the fascia bracket 2 by alignment of the  
30 hinge components 10 and 11, and then affixed by the insertion of the hinge pin 4, which may be held into place by split pin 12, it will be appreciated that the gutter bracket 3 may

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be pivotally rotated in the direction shown by arrows 13 in Fig. 2. That is, the gutter may be pivoted upwardly and outwardly between a first, or draining, position as shown in Fig. 2, and a second, or cleaning, position wherein the gutter is typically disposed between 90° and 180°, from the first or drainage position. Once in the second or cleaning position, the gutter may be easily hosed out, or brushed out with a broom or like cleaning implement, such that any and all leaves and other debris contained within the gutter 14 may be easily removed.

Fig. 1 also illustrates the provision of a swivel lock 15, which may be attached to the gutter bracket 3 and adapted to protrude through an elongate orifice 16, such that, when in the drainage position, the swivel lock may be rotated such that the gutter bracket 3 is prevented from moving apart from the fascia bracket 2. In alternative to the lock, the gutter may be constructed such that it would normally be biased to remain in the draining position. This could be achieved with a spring or other biasing means, if necessary, but otherwise it may remain naturally in this position without the provision of a spring or other biasing means.

It will be appreciated that the method of cleaning the gutter includes a few simple steps. Firstly, the swivel lock may be rotated, permitting the gutter to be outwardly pivotally moved in the direction shown by arrows 13 in Fig. 2 from the first or draining position to the second or cleaning position. The leaves may fall or be easily removed therefrom. Once cleaned, the gutter may be returned to the draining position, and the swivel lock 15 may be relocked.

It will be understood by persons skilled in the art that, when a single piece of guttering is required to be positioned along one edge of a roof, a relatively simple embodiment shown in Fig. 2 may be formed. However, most houses tend to have either outwards or inwards corners. Fig. 3 shows how the present invention may be easily adapted to cater for outward corners. It will be appreciated by persons skilled in the art that inward corners may be likewise catered for. In Fig. 3, Fig. 3(a) shows how the ends of the gutter may be angled such that they slightly overlap and abut with an adjacent angled

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edge, such that the outward rotation 13 is still enabled. Fig. 3(b) illustrates an alternative whereby a fixed corner piece is provided into which straight edged gutters may rest and slightly overlap and may still be easily rotated as necessary between draining and cleaning positions. Fig. 3 illustrates yet an alternative, whereby the corners are extended partially  
5 along the edges of the roof line. In some situations, this arrangement may be preferable to that of Fig. 3(b). Downpipes and the like can easily be provided in the fixed corner pieces shown in Figs. 3(b) or 3(c), or, downpipes could be utilised as shown in Fig. 4, whereby the gutter may be molded such that a downpipe extension 17 fits within a downpipe 18, the downpipe extension still being able to be pivotally moved in the direction of arrow 13.

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It will be appreciated that in most situations, an entirely waterproof seal need not be provided so, for example, the downpipe extension 17 can simply rest intermediate the walls of a downpipe 18. In some situations, it may be more desirable to have a more watertight seal, and it will be understood by persons skilled in the art that this can easily be  
15 achieved by the provision of an o-ring type seal or a silicon or rubber type seal between the components. Like seals may also be provided between the various guttering components and cornering components shown in Fig. 3.

It will be appreciated by persons skilled in the art that the present invention  
20 therefore provides a guttering system which may be easily cleaned, such that bushfire hazard build-up of leaves is easily avoided. It will be appreciated that the guttering components of the present invention may be easily combined to form a guttering system, and that numerous variations and modifications are envisaged to the guttering system.

For example, whilst a specific arrangement of components is illustrated in Fig. 1 to  
25 illustrate a bracket, various other means for connection of brackets to the gutters, brackets to the fascias, may be embodied. For instance, the gutter bracket could be eliminated as a separate component and formed integrally with the gutter. Likewise, different arrangements of fascia brackets could be provided, whereby the bracket could outwardly  
30 extend from beneath the eaves as opposed to the fascia, or, where the brackets may be adjustable, such that the gutter apparatus may be lowered for easy access, for instance,

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when installed on a steep or high roof. The important aspect of the present invention is that the guttering system may be pivotally moved between a first draining position and a second cleaning position, such that the gutter may be easily cleaned by the leaves either falling or being easily removed from the gutter.

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An example of an alternatively preferred embodiment is shown in Fig. 5, wherein, a tubular gutter may be supported in a circular-shaped bracket, such that the gutter may be rotated, e.g. by 180°, to spill any leaves and be hosed out for cleaning.

10        Whilst the guttering system shown in Fig. 1, illustrates a guttering system in which tabs 8 and 9 are provided to straddle the lips of the gutter, the variation in the embodiment illustrated in Fig. 6 shows guttering system components which would suit most types of gutters, whereby the gutter is attached to the hinged bracket by means of rivets. The hinge bracket component is illustrated in Fig. 6(a), whilst the based component of the bracket, or  
15        facia component, is shown in Fig. 6(b), and, the assembled device is shown in cross-sectional view in Fig. 6(c). It will be appreciated that by providing holes 20 at appropriate positions on the gutter bracket 3, most types of gutter will be able to be attached by rivets to these holes. Also shown in Fig. 6 are two alternative hinge mechanisms, whereby either a roll pin 21 or a hinge pin 22 may be provided for pivotal securement of the gutter bracket  
20        to the facia bracket.

      An alternatively preferred embodiment of the invention is shown in Fig. 6, which illustrates the gutter bracket 3 and facia bracket 2, each having a curved lower profile suitable for gutters having such shape. It will be appreciated that all functional mechanisms  
25        of the embodiment shown in Fig. 7 would be similar to those of the other embodiments hereinbefore described.

      Fig. 8 illustrates a gutter tilt tool head which is designed to connect to an aluminium extension rod for tilting of the gutter by a persons standing on a substrate or  
30        ground surface. The tool head effectively comprises an attachment means for attachment of the tool head 23 to an extension rod which may be attached by means of a screw thread



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at orifice 24. One or more engagement mechanisms 25 may be supplied, adapted to engage the front edge of the gutter, and, by appropriate movement of the extension rod, tilt the gutter. One such suitable arrangement is shown in Fig. 8, whereby an elongated slot 26 is adapted to receive the gutter such that it is engaged therewith, and can then be tilted. An appropriate shaped opening is provided to the elongate slot 26, the opening illustrated by reference numeral 27, such that the edge of the gutter is easily engaged. The embodiment of Fig. 8 shows a pair of slots, one on either end of an elongate rod 28, provided on the toolhead.

Fig. 9 illustrates, in Figs. 9(a) and 9(b), details of features for an external corner gutter. In particular, Fig. 9(a) illustrates how two gutters on an external corner may meet, each gutter labelled by reference numerals 29 and 30. The adjoining edges may be provided with 45° corner stop ends 31, the detail of which is shown in Fig. 9(b), to allow both gutters to be tilted down at the same time. Fig. 9(b) illustrates a 45° angle stop end for a right handed gutter, and it will, of course, be understood by persons skilled in the art that the mirror image may be used for a left handed gutter.

Fig. 10 illustrates an internal corner hinge clip, which is able to rotate about pivot point 34, in the direction shown by arrows 35. The hinge clip 33 is able to be connected to the fascia from the top hole 34, such that it can swing to the side to let the internal corner drop down. The clip 33 is provided having L-shaped arms 36 and 37 with an angled tab 38 thereon. The tab 38 is provided to be engaged with a tool, or by hand, such that the clip can be rotated to the desired position to allow free movement of the gutter. A hole 39 may be provided to facilitate engagement with an appropriate tool.

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All these and other variations and modifications which become apparent to persons skilled in the art from a reading of the specification herewith should be considered to fall within the scope of the present invention as broadly hereinbefore described and as hereinafter claimed.